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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/606,040	06/29/2000	Hans Sigrist	CSEM:060	7669

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Parkhurst & Wendel LLP
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EXAMINER

CHAKRABARTI, ARUN K

ART UNIT	PAPER NUMBER
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1634

DATE MAILED: 03/13/2002

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/606,040

Applicant(s)

SIGRIST ET AL.

Examiner

Arun Chakrabarti

Art Unit

1634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: *Detailed Action*.

Art Unit: 1634

DETAILED ACTION

Specification

1. Claims 3, 5, and 7 have been amended and new claims 16-20 have been added.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 5, the phrase "may be" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit:

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CAR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-20 are rejected under 35 U.S.C. 103(a) over Miyasaka et al. (U.S. Patent 5,154,808) (October 13, 1992) in view of Mazid et al. (U.S. Patent 5,308,460) (May 3, 1994).

Miyasaka et al teach a process for the preparation of a carbohydrate on a material surface by photochemically fixing one or more different compounds onto the material surface and by using the azide electron withdrawing groups (Column 2, line 39 to Column 6, line 38, and Claims 1-2).

Miyasaka et al teach the compounds used for the immobilization, which has the limitations of the claimed invention (Column 3, line 25 to Column 6, line 18).

Miyasaka et al teach the process of immobilization by the irradiation of light in detail (Column 8, lines 44-66).

Miyasaka et al teach the bioactive proteins constituting the solid support of the invention including enzymes (Column 9, lines 45-54).

Miyasaka et al teach a process, wherein X is the radical of a disaccharide (Claim 13).

Art Unit:

Miyasaka et al teach a process, wherein R is linear C2-C24-alkylene (Claim 13).

Miyasaka et al teach a process, wherein R1 is fluorine and n is an integer from 0 to 4 (Claim 13).

Miyasaka et al do not teach a process of attaching enzymatically one or more further carbohydrates to the X radicals of the modified surface.

Mazid et al teach a process of attaching enzymatically one or more further carbohydrates to the X radicals of the modified surface (Abstract, Column 2, lines 43-62, and Claims 1-9, and Examples 1-4).

It would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to combine and substitute a process of attaching enzymatically one or more further carbohydrates to the X radicals of the modified surface of Mazid et al. in the method of Miyasaka et al, since Mazid et al. state, "Hence, it is of interest to provide highly sensitive and convenient methods for the utilization of carbohydrate-modifying enzymes in oligosaccharide synthesis. Such highly sensitive and convenient methods would have a number of uses that are difficult, expensive or impossible, to achieve using currently available techniques. These uses include the detection and purification of carbohydrate products having natural or unnatural structures. For the sake of convenience and economy, it is also of interest to provide for the repeated use of enzyme preparations for carbohydrate synthesis and detection (Column 2, lines 47 to 59)." Moreover, Comanor et al provide further motivation as Comanor et al state, "Using the methods, software, and apparatus described herein, robust, statistically significant models of

Art Unit:

patient responsiveness that reduce the problems associated with present treatment response prediction methods that are brittle and oversimplify the complex interactions among treatment variables, can assist patients and clinicians in determining therapies (Abstract, last sentence)". By employing scientific reasoning, an ordinary practitioner would have been motivated to combine and substitute a process of attaching enzymatically one or more further carbohydrates to the X radicals of the modified surface of Mazid et al. in the method of Miyasaka et al, in order to improve the process for producing a functional organic thin film and in order to achieve the express advantages, as noted by Mazid et al., of an invention which provides highly sensitive and convenient methods for the utilization of carbohydrate-modifying enzymes in oligosaccharide synthesis, which would have a number of uses that are difficult, expensive or impossible, to achieve using currently available techniques and which includes the detection and purification of carbohydrate products having natural or unnatural structures and for the sake of convenience and economy, which is also of interest to provide for the repeated use of enzyme preparations for carbohydrate synthesis and detection.

Response to Amendment

8. In response to amendment, previous 112 (second paragraph) and 102 rejections are hereby withdrawn. However, one new 112(second paragraph) and 103 (a) rejection is hereby included.

Art Unit:

Response to Arguments

9. Applicant's arguments with respect to all pending claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arun Chakrabarti, Ph.D., whose telephone number is (703) 306-5818. The examiner can normally be reached on 7:00 AM-4:30 PM from Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Jones, can be reached on (703) 308-1152. The fax phone number for this Group is (703) 305-7401.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group analyst Chantae Dessau, whose telephone number is (703) 605-1237.

Arun Chakrabarti,

Patent Examiner,

March 7, 2002


ARUN K. CHAKRABARTI
PATENT EXAMINER